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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,488	01/28/2002	Satoshi Shigematsu	96790p382	5883

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EXAMINER

VIEAUX, GARY

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/059,488

Applicant(s)

SHIGEMATSU ET AL.

Examiner

Gary C. Vieaux

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5-10, 12-16, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                                        |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/28/02 and 8/28/03</u> | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's response to the Restriction Requirement of October 4, 2005, has  
5 been received and made of record. Election was made in relation to the first species as  
shown in Figs. 1 and 2A-2C, and as applied to by claims 1-4, 11, and 17-18. Claims 5-  
10, 12-16, and 19-20 are withdrawn from further consideration pursuant to 37 CFR  
1.142(b) as being drawn to a nonelected species.

Because applicant did not distinctly and specifically point out supposed errors in  
10 the restriction requirement, the election has been treated as an election without traverse  
(MPEP §818.03(a)).

### ***Information Disclosure Statement***

The information disclosure statements (IDS) submitted on the following dates are  
15 in compliance with the provisions of 37 CFR 1.97 and are being considered by the  
Examiner: January 28, 2002; and August 28, 2003.

### ***Specification***

The abstract of the disclosure is objected to because it should not be a mere  
20 recitation of the claims. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5

**Claim 1** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "large" and "substantial" in claim 1 are relative terms that render the claim indefinite. Neither of the terms "large" nor "substantial" are defined by the claim, the specification does not provide a standard for ascertaining the requisite degrees, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The limitations implemented are rendered indefinite, as the parameters of "large" are not defined so as to differentiate what is considered a large number of sensors by one of ordinary skill in the art from that which is considered a large number by another of ordinary skill in the art, and similarly, the parameters of "substantial" are not defined so as to differentiate what is considered a substantial conversion start point by one of ordinary skill in the art from that which is considered a substantial conversion start point by another of ordinary skill in the art.

For the purpose of examination of claim 1 on its merits, claim 1 will be interpreted without the indefinite language.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

5 (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 10 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claim 1-4 and 11** are rejected under 35 U.S.C. 102(e) as being anticipated by Hou (US 6,578,145.)

15 Regarding claim 1, Hou discloses a data conversion/output apparatus comprising sensors (fig. 3 indicators 302-n), voltage-time conversion circuits which are arranged adjacent to said respective sensors and change output levels upon the lapse of times corresponding to output voltage values from said sensors after a conversion operation start point in order to convert voltage outputs of said sensors into times (fig. 3 indicators 20 312-n, col. 6 lines 41-44), and sensed data generation circuits for outputting, as digital data, lapse times until the output levels of said voltage-time conversion circuits change after a conversion start point (fig. 3 indicator 314-n, col. 6 lines 45-58.)

Regarding claim 2, Hou discloses all of the limitations of claim 2 (see the 102(b) rejection to claim 1 supra), including disclosing a data conversion/output apparatus 25 further comprising control means for sequentially supplying outputs from said voltage-time conversion circuits to said sensed data generation circuits (col. 5 lines 30-44.)

Regarding claim 3, Hou discloses all of the limitations of claim 4 (see the 102(b) rejection to claim 1 supra), including wherein said sensors are arranged in a matrix together with said corresponding voltage-time conversion circuits to constitute respective pixels (fig. 3, in which indicator 302 and indicator 312 can be interpreted as one unit), and said data conversion/output apparatus further comprises group selection means for selecting, from the pixels in a column direction, pixels which are aligned in a row direction and connected to one of said sensed data generation circuits (fig. 3., col. 5 lines 30-44.)

Regarding claim 4, Hou discloses all of the limitations of claim 4 (see the 102(b) rejection to claim 3 supra), including wherein said sensed data generation circuit includes a counter for counting a clock signal (fig. 3A indicator 311), and a latch circuit for latching a count value after the conversion operation start point of said counter upon reception of an output from said voltage-time conversion circuit of each group-selected pixel (fig. 3A indicator 314-n, col. 6 lines 45-51.)

Regarding claim 11, Hou discloses all of the limitations of claim 11 (see the 102(b) rejection to claim 3 supra), including wherein said sensed data generation circuit includes a counter for counting a clock signal (fig. 3A indicator 311), and a latch circuit for latching a count value of said counter after a point offset from the conversion operation start point upon reception of an output from said voltage-time conversion circuit of each group-selected pixel (fig. 3A indicator 314-n, col. 7 line 17 – col. 8 line 15.)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

5 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10 **Claims 17 and 18** are rejected under 35 U.S.C. 103(a) as being obvious over Simoni et al. ("A Digital Camera for Machine Vision"; employing Applicant's disclosure of this prior art as provided in relation to Figure 12 of Specification) in view of Hou (US 6,587,145.)

15 Regarding claim 17, Simoni, employing Applicant's disclosure of this prior art as provided in relation to Figure 12 of Specification, discloses a data conversion/output apparatus including a column decoder for selecting at once a plurality of pixels aligned on an arbitrary column from pixels arrayed in a matrix (fig. 12 indicator 72), a plurality of data buses each commonly connected to a plurality of pixels aligned on each row out of the pixels (fig. 12 indicator 74), a counter for sequentially outputting count values in  
20 accordance with internal count operation (fig. 12 indicator 76), a plurality of latch circuits which are arranged on respective rows and latch the count values from said counter in accordance with level changes of said data buses corresponding to the respective rows (fig. 12 indicator 77), a row decoder for selecting a row having a desired pixel out of the pixels selected by said column decoder (fig. 12 indicator 73), and a plurality of row  
25 switches which are arranged on the respective rows and output as sensed data of desired pixels the count values latched by said latch circuits corresponding to the



respective rows (fig. 12 indicator 75), wherein each of the pixels has a sensor for outputting a detection result as an output voltage value (fig. 12 indicator 73), and a column switch for outputting in accordance with selection of a pixel by said row decoder an output to a data bus connected to the pixel (Specification – fig. 12 indicator 63.)

- 5 However, Simoni does not disclose a voltage-time conversion circuit for changing an output level upon the lapse of time corresponding to an output voltage value from said sensor after a predetermined conversion operation start point.

Nevertheless, Hou discloses a data conversion/output apparatus that includes a voltage-time conversion circuit that changes an output level upon the lapse of time  
10 corresponding to an output voltage value from said sensor after a predetermined conversion operation start point (col. 3 line 4 col. 4 line 52.) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the voltage-time conversion circuit of the data conversion/output apparatus as taught by Hou with the data conversion/output apparatus as taught by Simoni, in order to produce signals of  
15 higher fidelity, as well as to accomplish A/D conversion within a pixel without requiring each pixel to have the extra circuitry and costs associated with conventional A/D circuits ('030 – col. 1 lines 33-62.)

Regarding claim 18, Simoni and Hou disclose all of the limitations of claim 17 (see the 103(a) rejection to claim 17 supra), including disclosing a data  
20 conversion/output apparatus further comprising a plurality of output-side latch circuits which are interposed between said latch circuits and said row switches for the respective rows, latch outputs from said latch circuits in accordance with a

Art Unit: 2612

predetermined data reception signal, and output the outputs to said switches (Figure 12 of Specification, indicator 77.)

**Contact**

5 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary C. Vieaux whose telephone number is 571-272-7318. The examiner can normally be reached on Monday - Friday, 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NgocYen T. Vu can be reached on 571-272-7320. The fax phone number  
10 for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.  
15 For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary C. Vieaux  
Examiner  
Art Unit 2612

20 Gcv2

  
NGOC-YEN VU  
PRIMARY EXAMINER